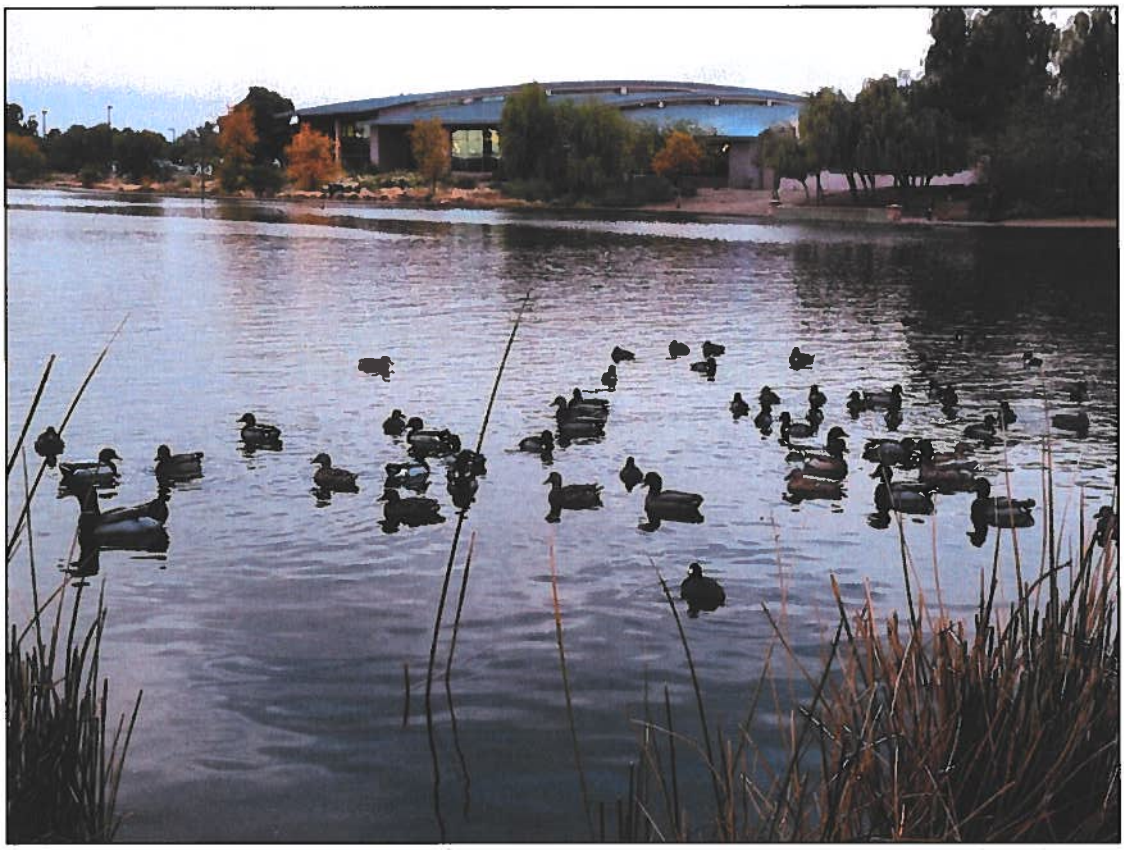

Water Ranch Lake, Gilbert
Fisheries Management Plan
2019-2029

Scott Gurtin, Community Fishing Program Manager

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Approved [X] by Chris Cantrell [signature] Date: 6/29/19
Aquatic Wildlife Branch Chief

Location

Water Ranch is located near Greenfield Road and Guadalupe Road in Gilbert; at Latitude 33.363512, Longitude -111.736333 (Figure 1).

Figure 1. Water Ranch Lake, Gilbert AZ.

Management Prescription

The Arizona Game and Fish Department (Department) has developed concepts under Strategic Vision Documents (AGFD 2019a-b) to help guide fisheries management in Arizona. The Department also developed a Community Fishing Program (CFP) Vision in 2015 to further guide management objectives in CFP waters, for angler catch per unit effort (CPUE; fish caught per hour) and angler satisfaction (AGFD 2015). Target catch rates and angler satisfaction is the same for all CFP waters: Achieve an angler satisfaction rate of at least 85% for each individual water, and overall catch-rates greater than 0.50 fish/hr. Water Ranch has employed an Intensive Use or put-and-take management strategy since the lake was added to the program in 1999. Since that time, there has been some controversy about the fishing regulations.

Rainbow Trout *Oncorhynchus mykiss*: Catchable Rainbow Trout will continue to be stocked monthly from mid-November to mid-March (4 stockings) at a rate of 30-40 pounds per acre. Stocked rainbows will average 0.75 lbs and have an average length of 10"-13". An established bag limit of 2 trout per day shall remain until further notice.

Channel Catfish *Ictalurus punctatus*: Catchable catfish will continue to be stocked four times annually from September to June. No stocking shall take place in July or August due to extreme temperatures. Catfish are stocked at a rate of approximately 100 pounds per acre. Stocked catfish average 1.5 to 2.0 pounds and have an average length of 14"-18". An established bag limit of 2 catfish per day shall remain until further notice.

Bluegill *Lepomis macrochirus* and/or **Redear Sunfish** *Lepomis microlophus*: Catchable sunfish are stocked once per year, usually in March or April. Sunfish are stocked at a rate of approximately 30 pounds per acre and have an average length of 5"-8". No take is allowed for sunfish and bass as it is catch-and-release for those species. A single barbless hook is required.

Largemouth Bass *Micropterus salmoides*: Catchable (13 inches or greater) or sub-catchable (less than 13 inches) Largemouth bass are stocked periodically depending upon available funds, but no more than once per year and usually in March or April. Largemouth Bass are stocked at a rate of approximately 20-30 pounds per acre. No take is allowed for Largemouth Bass as it is catch-and-release for those species. A single barbless hook is required.

Table 1. Water Ranch Lake Stocking Management Strategy:

Species	Management Strategy	Regulations	Stocking
Focal Species[1]			
Rainbow Trout	Basic Yield – Winter Months	Limit 2 per day	Monthly November to March
Channel Catfish	Basic Yield – Summer Months	Limit 2 per day	Four times annually
Sunfish (Bluegill, Redear)	Basic Yield – Year Round	Catch-and-release only	Once per year
Largemouth Bass	Basic Yield – Year Round	Catch-and-release only	Once per year

[1] Species approved for stocking by U. S. Fish and Wildlife Service.

Table 2. Water Ranch Lake Objectives and Adaptive Management Strategies:

Objective 1: Maintain an Intensive Use Rainbow Trout fishery.			
Parameters	**Objective Guideline**	**Trigger point to address unmet Objectives**	**Strategies if Objectives are Unmet**
Angler Catch Rates	Maintain an angler catch rate of 0.5 fish/hour during stocking season.	Catch rates drop below 0.5 fish/hour during assessment of catch rates on a 5 year rotational basis through creel surveys.	• Implement changes in daily bag limit. • Increase number of Rainbow Trout stocked to meet target catch rate. • Increase frequency of stocking. • Increase law enforcement patrols to reduce poaching.
Objective 2: Maintain an Intensive Use Channel Catfish fishery.			
Parameters	**Objective Guideline**	**Trigger point to address unmet Objectives**	**Strategies if Objectives are Unmet**
Angler Catch Rates	Maintain an angler catch rate of 0.5 fish/hour during stocking season.	Catch rates drop below 0.5 fish/hour during assessment of catch rates on a 5 year rotational basis through creel surveys.	• Implement changes in daily bag limit. • Increase number of Channel Catfish stocked to meet target catch rate. • Increase frequency of stocking. • Increase the amount of artificial habitat. • Increase law enforcement patrols.
Objective 3: Maintain an Intensive Use Water for Bluegill and/or Redear Sunfish.			
Angler Catch Rates	Maintain an angler catch rate of 0.5 fish/hour.	Catch rates drop below 0.5 fish/hour during assessment of catch	• Implement changes in daily bag limit. • Increase number of

		rates on a 5 year rotational basis through creel surveys.	bluegill stocked to meet target catch rate. • Increase frequency of stocking. • Increase the amount of artificial habitat. • Increase law enforcement patrols. • Suppress predators.
Objective 4: Maintain satisfaction rate of at least 85%.			
Angler Satisfaction	A minimum of 85% of anglers rate fishing as fair, good or excellent.	Creel census shows less than 85% of anglers rate fishing as fair, good or excellent.	• Increase stocking rates. • Increase size of fish stocked. • Increase or modify efforts for angler education, preferably at the lake. • Increase law enforcement efforts.

Background

Water Ranch is an artificially constructed lake located in Gilbert, Arizona at the intersection of Guadalupe Road and Greenfield Road (Figure 1). In 1986, the Town of Gilbert (Town) made a commitment to reuse 100% of its effluent water. The Town's desire to create innovative and unique ways to combine water resource development with wildlife habitat, educational and recreational opportunities led to the development of the Riparian Preserve in 1999.

Water Ranch is a 5-acre lake that is part of a 110-acre preserve that includes 7 other water recharge basins (70 acres) that are filled on a rotating basis with treated effluent and allowed to percolate into the aquifer where it is stored for future use (Figure 2). One of the ponds has a unique distribution stream that mimics the action of an ephemeral desert stream. Water Ranch Lake is filled with reclaimed water, and was designated as an urban fishing resource in 1999.

The Preserve is organized into various vegetative zones ranging from marshlands to native riparian and upland vegetation areas. Over 4.5 miles of trails weave through the park, and there are interpretive education panels on wildlife and vegetation throughout. Viewing blinds have been established at various locations near the edge of several ponds to further enhance the visitor's experience. A floating boardwalk crossing the northern end of the lake allows visitors a close up view of the fish and ducks on the water. Additional educational areas include an ethnobotanical garden, a paleontology dig site, gardens for pollinators including a hummingbird garden and butterfly garden, plus a state-of-the-art observatory and hilltop outdoor classroom. The preserve also includes restroom facilities, picnic ramadas, and a play area.

Water Ranch Lake was designed to accommodate urban angler needs such as parking, restrooms, handicap access, and fishing access. The lake was built for park aesthetics, recreational fishing, and for use in watering park landscape. This artificial lake has a sealed bottom and a perimeter edge of concrete and shallow dirt. Lake depths average 12 feet, with a maximum of 17 feet. Water Ranch Lake is considered a closed system water body because it has no drainage inflow and no outflow or spillway. Rock reefs and aerations systems were installed at the time of construction.

The lake was added to the program as a "Core" stocking water with routine intensive stocking of catchable catfish during the summer months (March-November) and Rainbow Trout during the winter months (November-March). Sunfish were often stocked twice per year around March and October. Regulations, bag limits, and stocking frequency changed in January 2015 by converting the lake to a catch-and-keep for trout and catfish, and catch-and-release for bass and sunfish. A single barbless hook requirement was also added. Since January 2015 the lake has received a custom stocking strategy with monthly stocking of trout from November to February, four stockings of catfish in September, October, March, and April; and one stocking of Bluegill and bass in March or April. This strategy was revised yet again in 2018 with the departure of the Parks Director, and Water Ranch was restored to a normal "Expansion" water.

Productivity/Water Quality

The Town Parks and Recreation Department has a contractor (H2Ology) that manages the algae and aquatic macrophytes via periodic application of herbicides. Prior to 2016, the lake was known to have very good water quality. In February 2016, the lake was confirmed to have Golden Algae *Prymnesium parvum* following a partial fish kill. While the lake still has very good water quality, the presence of Golden Algae will henceforth pose threats to the fishery due to its ability to produce toxin that kills fish and other gill breathing animals.

Forage/Prey

Very little data has been collected by the Department on forage or prey species assemblage from Water Ranch Lake since entering the CFP in 1999. Based on stocking records as well as observations, the lake is known to harbor Fathead Minnow *Pimephales promelas* as well as Bluegill and Redear Sunfish. The lake consultant likely has stocked White Amur *Ctenopharyngodon idella* to control aquatic vegetation.

Habitat

The lake was designed with a few piles of large and mid-size cobble in the lake, and an aeration system. Emergent aquatic vegetation has grown in significantly around the north perimeter of the lake since construction as well. As mentioned above, the Town has a lake management consultant to monitor and control aquatic plants and algae, which are rarely problematic. Water quality and clarity is usually good or excellent at the lake. The lake has a somewhat natural shoreline around the north, east, and south shores, and concrete edges on the west. The naturalized shoreline is extremely popular to anglers who prefer fishing in a more natural setting.

Access

Access to Water Ranch is via two separate parking lots off Guadalupe Road, or a parking area next to the library on Greenfield Road. Access to fishing along the shoreline is generally good and unrestricted. There are no boat ramps on the lake and the park posts open times from 5:30am to 10:00pm. There are numerous walking trails all the way around the lake. There is a significant walkway dock on the north end of the lake, but fishing from the dock is prohibited.

Species

Very little data has been collected on fish species assemblage from Water Ranch since it was constructed. Department records from 2006 report seasonal Rainbow Trout, Channel Catfish, Bluegill, Redear Sunfish, hybrid sunfish, Tilapia, White Amur, and Largemouth Bass are present. Data from the 2015 angler creel survey indicate that anglers are targeting any fish most frequently, followed by the focal species being stocked at the time. During November to March, that primary target species was trout, and from March to November the primary target species was catfish.

The CFP has conducted extensive angler creel surveys every 5 years to monitor target species, catch rates, angler satisfaction, harvest rates, and expenditures that can be used to evaluate the economic importance of the lake.

Invasive Species

There are no confirmed records of aquatic invasive species at Water Ranch. The risk remains high however, because of its public and waterfowl use. Golden Algae was first detected in the state of Arizona in Water Ranch Lake in April 2005. The source was unknown.

Catch

Our target catch rates and angler satisfaction is the same for all CFP waters: Achieve an angler satisfaction rate of at least 85% for each individual water, and overall catch-rates greater than 0.50 fish/hr. Water Ranch had an overall CPUE of 0.28 in 2010, and AUD of 26,100. Catch rate decreased from 0.28 fish/hr in 2010 to 0.13 fish/hr in 2015 (Arizona Game and Fish Department 2017), yet angler satisfaction increased (Table 3).

Target species are usually the species being stocked, depending upon the time of year. Within the Community Fishing Program, Water Ranch used to have one of the heaviest use rates, but has likely fallen in popularity due to the changes including reduced stocking, bag limits, and gear restrictions.

Satisfaction

Angler satisfaction is of paramount importance to the Department. We measure angler satisfaction via two different methods. The first is by the median score on a 10-point scale; and the second is by the percentage of anglers giving a satisfactory score (6-10) on the same scale. In 2010 median angler satisfaction was 8 out of 10, with 81% of anglers giving a satisfactory score.

During Creel surveys and interactions with anglers, Department staff will ask a standardized question regarding an angler's satisfaction with the fishery. Angler satisfaction of 85% is the goal of the fishery and for the program as a whole.

Literature Cited

Arizona Game and Fish Department. 2015. Community Fishing Program Vision for 2015-2025. Arizona Game and Fish Department, Community Fish Program, Phoenix, Arizona.

Arizona Game and Fish Department. 2017. Community Fishing Program 2015 Creel Survey Report. Arizona Game and Fish Department, Community Fishing Program, Phoenix, Arizona.

Arizona Game and Fish Department. 2019a. Warmwater Sportfisheries Strategic Vision Document. Arizona Game and Fish Department, Statewide Sportfish Program, Phoenix, Arizona.

Arizona Game and Fish Department. 2019b. Coldwater Sportfisheries Strategic Vision Document. Arizona Game and Fish Department, Statewide Sportfish Program, Phoenix, Arizona.

Tables and Figures

Table 3. Catch rates of anglers at Water Ranch Lake as measured by creel surveys. AUD = Angler user day.

	Catch Rate Overall	Catch Rate RBT	Catch Rate CCF	Angler Satisfaction Median Score	Angler Satisfaction % Giving 6-10	AUD's
WR 2000	0.45	0.41	0.13	8	86	19,300
WR 2005	1.31	0.40	0.85	8	78	12,900
WR 2010	0.28	0.38	0.65	8	81	26,100
WR 2015	0.13	NA	NA	8	90	9,800

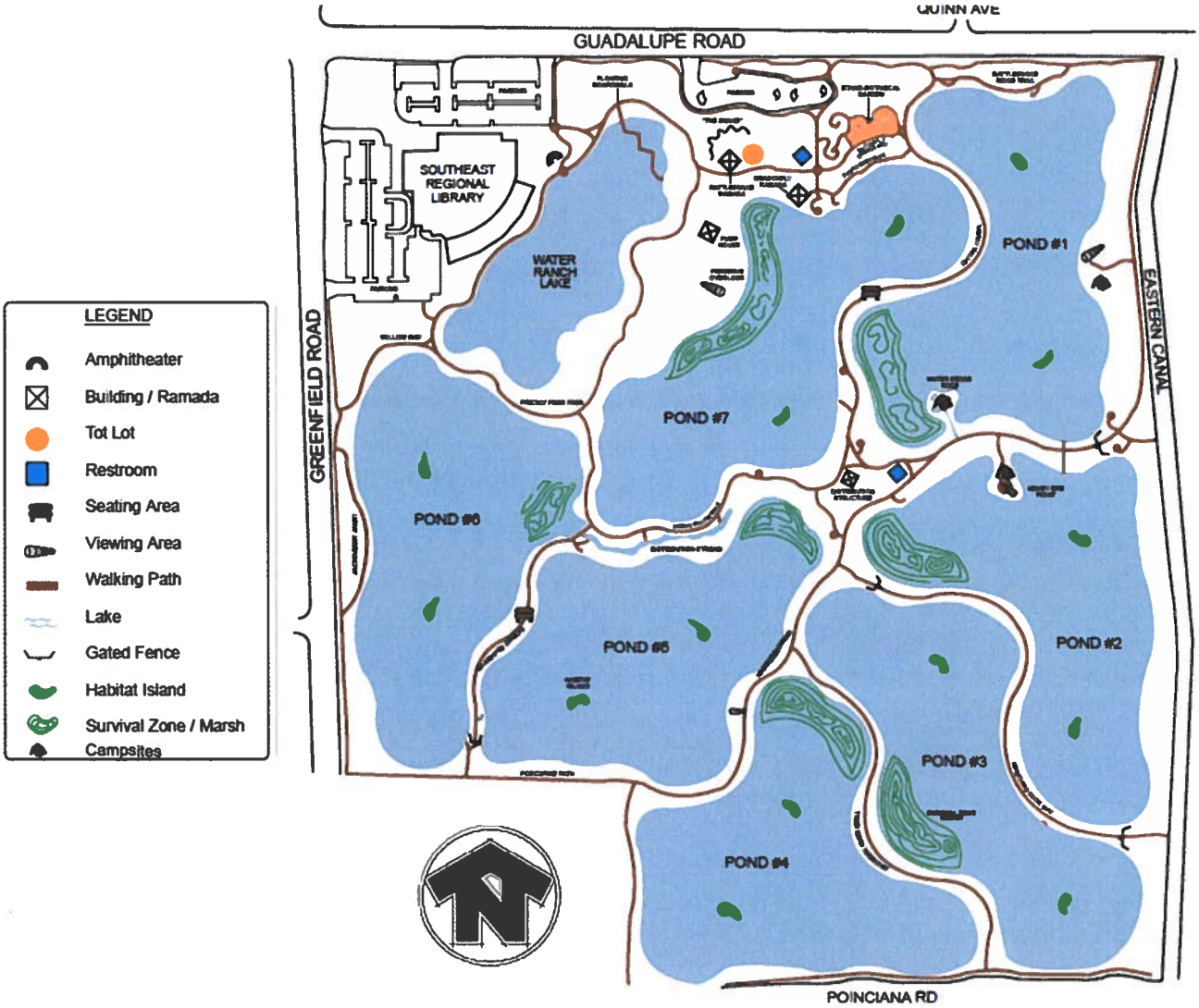

Figure 2. Riparian Preserve at Water Ranch.